



LOWELL REGIONAL WASTEWATER UTILITY

WASTEWATER COLLECTION AND TREATMENT



MARK A. YOUNG
EXECUTIVE DIRECTOR

SERVING LOWELL
CHELMSFORD
DRACUT
TEWKSBURY
TYNGSBORO

April 12, 2019

Massachusetts Department of Environmental
Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

Department of Environmental Protection
Division of Watershed Management
627 Main Street – 2nd Floor
Worcester, MA 01608-2022

RE: MA0100633

To Whom It May Concern:

The following is an itemization of status and improvement for the Lowell Regional Wastewater Utility during March 2019. Enclosed is a copy of the Discharge Monitoring Report for this period.

The Discharge Monitoring Report is also now being submitted electronically to the Environmental Protection Agency through the NetDMR website.

PERMIT EXCEEDANCES:

There were three permit exceedances for the month of March 2019.

- A permit exceedance occurred for the 12-month rolling average flow, in conduit or thru the treatment plant. The 12-Month rolling average flow after January is 32.35 MGD and our permit limit is 32.0 MGD.
- A permit exceedance occurred on March 26th, 2019 with a daily TSS result of 64.0 mg/L. The daily effluent Permit Limit is 50.0 mg/L. The ongoing construction of the Phase 2B Plant Upgrade Project was the main contributor to the violations. Further details of the violation can be found in the attached exceedance notification correspondence.
- A permit exceedance occurred on March 31st, 2019 with a daily TSS result of 51.0 mg/L. The daily effluent Permit Limit is 50.0 mg/L. The ongoing construction of the Phase 2B Plant Upgrade Project was the main contributor to the violations. Further details of the violation can be found in the attached exceedance notification correspondence.

WET WEATHER CSO DIVERSIONS/SECONDARY TREATMENT BYPASS:

- Included on pages 9 and 10 of the Plant Operating Data attachment.

FECAL COLIFORM:

- Results of additional Fecal Coliform samples required during bypassing of secondary treatment, when applicable, are included on page 8 of the Plant Operating Data attachment.

PROCESS CHANGES AND IMPROVEMENTS:

- Anoxic periods in the last cell of the aeration system have been stopped, starting on October 24th, due to the cold weather. Anoxic mode was temporarily enabled from March 18th to March 25th due to high NO₃ levels.
- Belt Filter Press No.2 is off line indefinitely due to complete mechanical failure.
- The Phase 2B upgraded sludge conveyance system went online March 13th. Between March 4th and March 13th a shutdown of the sludge conveyance and dewatering system took place. During this time liquid sludge was hauled from the facility via tanker trucks. The shutdown resulted in a drastic rise in MLSS, filamentous bacteria, and the secondary clarifier blanket depths.
- On March 24th Secondary Clarifier No. 3 was taken offline for a complete upgrade. Taking down the clarifier temporarily increased the blanket depths, limited flow to aeration, and required the interceptor to be used for storage.
- On March 27th the new Phase 2B Rotary Drum Thickener went online and was placed into service.

MAJOR EQUIPMENT MAINTENANCE:

- March 5th – WAS Pump No.1 was taken out of service for repairs.
- March 19th – BFP No.1 was brought back into service.
- March 25th – Primary Tank No.2 was brought back into service.

COMMERCIAL POWER OUTAGES:

- There were no power outages reported during this period.

ODOR COMPLAINTS:

- There were no odor complaints received during this period.

MAJOR EQUIPMENT IN SERVICE FOR THIS PERIOD:

Screw Pumps:	Nos. 1, 2, 3, and 4	Chlorine Contact Tanks:	Nos. 1 and 2
Primary Clarifiers:	Nos. 1, 2, 3, 4, 5, and 6	Gravity Thickeners:	Nos. 1 and 2
Biological Selectors:	Nos. 1, 2, 3, and 4	Belt Filter Presses:	Nos. 1
Secondary Clarifiers:	Nos. 1, 2, and 4	Aeration Blowers:	Nos. 1, 2, 3, and 4
Rotary Drum Thickeners:	No. 723, BDP	Temporary Centrifuge:	Online

PLANT EFFICIENCIES:

	Influent	Effluent	Average Removal
CBOD (5-Day):	208.9 mg/l	11.6 mg/l	91.3%
Suspended Solids:	135.0 mg/l	19.0 mg/l	79.9%

Respectfully,

A handwritten signature in black ink, appearing to be 'A. Fox', with a long horizontal stroke and a small loop at the end.

Aaron Fox, Operations Superintendent
Lowell Regional Wastewater Utility
First St. Blvd. (Rt. 110)
Lowell MA 01850

Monthly Report March 2019

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

Form Approved.

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

DISCHARGE MONITORING REPORT (DMR)

NAME: LOWELL REGIONAL WW UTILITY
 ADDRESS: 451 FIRST ST BLVD
 LOWELL, MA 01850
 FACILITY: LOWELL REGIONAL WW UTILITY
 LOCATION: 451 FIRST ST BLVD
 LOWELL, MA 01850

MA0100633	035-A
PERMIT NUMBER	DISCHARGE NUMBER

DMR MAILING ZIP CODE: 01850

MAJOR \$
 (SUBR E)

TREATED EFFLUENT
 External Outfall

ATTN: AARON FOX, OPER. SUPT

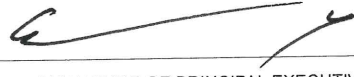
FROM

MONITORING PERIOD		
MM/DD/YYYY		MM/DD/YYYY
03/01/2019	TO	03/31/2019

TO

NO DISCHARGE

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	*****	*****	*****	6.7	*****	7.0	SU	0	01/01	GR
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	6.0 MINIMUM	*****	8.3 MAXIMUM	SU		Daily	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	4,880	*****	lb/d	19.0	39.52	64.0	mg/L	0	05/07	24
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	8,006 MO AVG	*****	lb/d	MO AVG	45 WKLY AVG	DAILY MAX	mg/L		Weekdays	COMP24
Solids, total suspended	SAMPLE MEASUREMENT	35,825	*****	lb/d	135.0	*****	*****	mg/L	0	05/07	24
00530 0 0 Raw Sewage Influent	PERMIT REQUIREMENT	Req. Mon. MO AVG	*****	lb/d	Req. Mon. MO AVG	*****	*****	mg/L		Weekdays	COMP24
Phosphorus, total (as P)	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	3.4	mg/L	0	01/30	24
00665 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	Req. Mon. DAILY MX	mg/L		Monthly	COMP24
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	32.35	49.57	MGD	*****	*****	*****	*****	1	99/99	RC
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	32 12MO AVG	Req. Mon. DAILY MX	MGD	*****	*****	*****	*****		Continuous	RCORDR
Chlorine, total residual	SAMPLE MEASUREMENT	*****	*****	*****	0.034	*****	0.16	mg/L	0	99/99	RC
50060 0 0 Intake	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MO AVG	*****	Req. Mon. DAILY MX	mg/L		Continuous	RCORDR
Chlorine, total residual	SAMPLE MEASUREMENT	*****	*****	*****	0.04	*****	0.14	mg/L	0	01/01	GR
50060 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	0.21 MO AVG	*****	0.37 DAILY MX	mg/L		Daily	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER AARON FOX OPERATIONS SUPERINTENDENT TYPED OR PRINTED	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE		DATE	
			978 674-4248		04/12/2019	
			AREA CODE	NUMBER	MM/DD/YYYY	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT MAXIMUM AND MINIMUM DAILY RATES AND TOTAL FLOW FOR EACH OPERATING DATE WITH DMR. QUARTERLY DATA ON DMR 035Q, WET DATA ON 035B. PERMIT DATA 9-1-05

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

Form Approved.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

NAME: LOWELL REGIONAL WW UTILITY
 ADDRESS: 451 FIRST ST BLVD
 LOWELL, MA 01850
 FACILITY: LOWELL REGIONAL WW UTILITY
 LOCATION: 451 FIRST ST BLVD
 LOWELL, MA 01850
 ATTN: AARON FOX, OPER. SUPT

MA0100633	035-A
PERMIT NUMBER	DISCHARGE NUMBER

DMR MAILING ZIP CODE: 01850

MAJOR \$

(SUBR E)

TREATED EFFLUENT

External Outfall

MONITORING PERIOD			
MM/DD/YYYY		MM/DD/YYYY	
03/01/2019	FROM	03/31/2019	TO

NO DISCHARGE

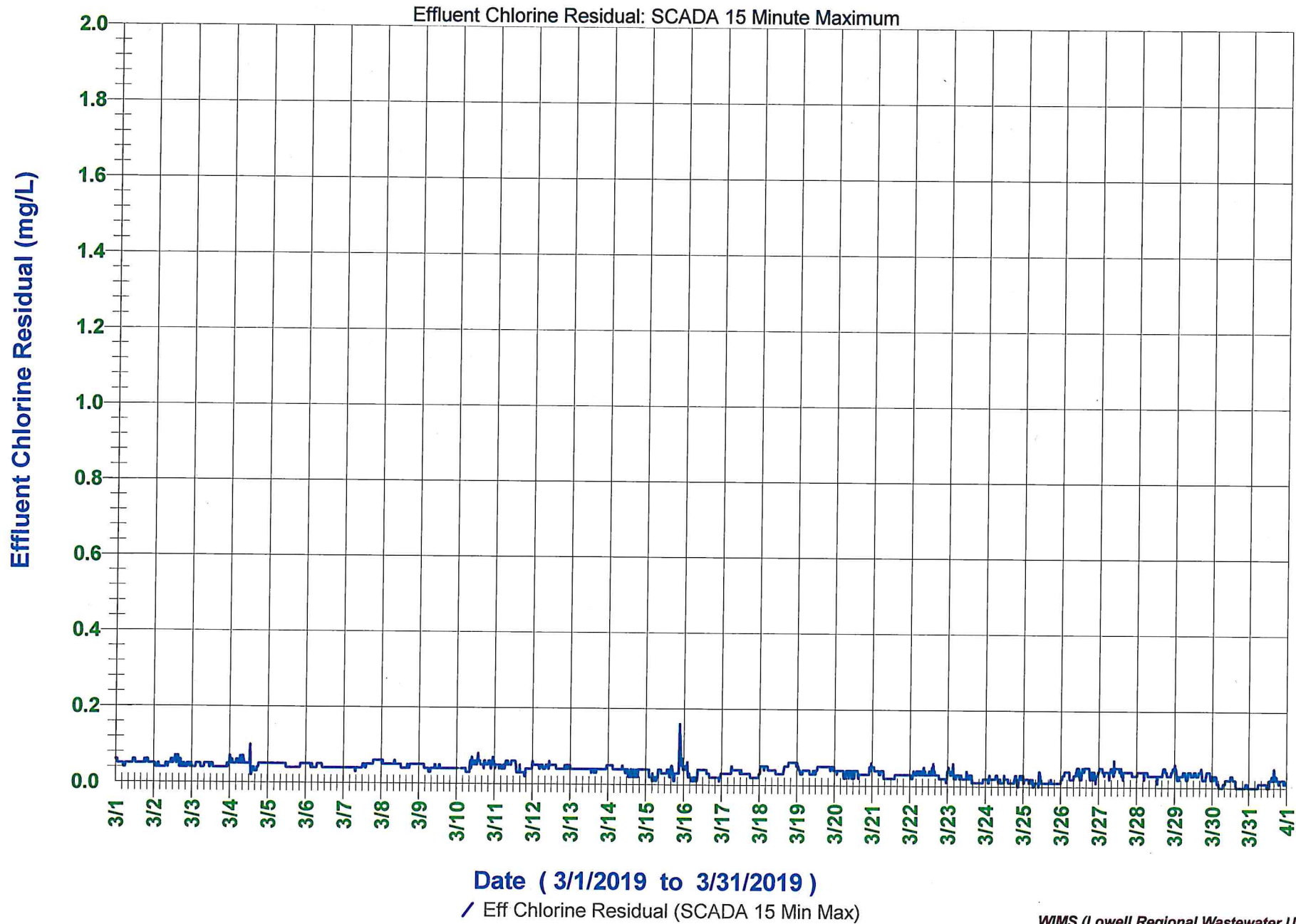
PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Coliform, fecal general	SAMPLE MEASUREMENT	*****	*****	*****	1	*****	8	#/100mL	0	05/07	GR
74055 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	MO GEO	*****	DAILY MX	#/100mL		Weekdays	GRAB
BOD, carbonaceous, 05 day, 20C	SAMPLE MEASUREMENT	3,033	*****	lb/d	11.6	19.18	45.0	mg/L	0	05/07	24
80082 1 0 Effluent Gross	PERMIT REQUIREMENT	6,672 MO AVG	*****	lb/d	MO AVG	40 WKLY AVG	DAILY MX	mg/L		Weekdays	COMP24
BOD, carbonaceous, 05 day, 20C	SAMPLE MEASUREMENT	54,449	*****	lb/d	209.1	*****	*****	mg/L	0	05/07	24
80082 G 0 Raw Sewage Influent	PERMIT REQUIREMENT	Req. Mon. MO AVG	*****	lb/d	Req. Mon. MO AVG	*****	*****	mg/L		Weekdays	COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE		DATE	
AARON FOX OPERATIONS SUPERINTENDENT		978 674-4248		04/12/2019	
TYPED OR PRINTED		AREA CODE	NUMBER	MM/DD/YYYY	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT MAXIMUM AND MINIMUM DAILY RATES AND TOTAL FLOW FOR EACH OPERATING DATE WITH DMR. QUARTERLY DATA ON DMR 035Q, WET DATA ON 035B. PERMIT DATA 9-1-05

Lowell Regional Wastewater Utility - MA0100633



WIMS (Lowell Regional Wastewater Utility)
Effluent Chlorine Residual

Lowell Regional Wastewater Utility

NPDES Report (Permit NO. MA0100633)

Printed on Fri Apr 12 2019

March 2019

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Date	Plant Influent Data								
	Plant Influent Flow			CBOD		TSS		VSS	TVS
	Total (MG)	Max Hourly (MGD)	Min Hourly (MGD)	(mg/L)	(lbs)	(mg/L)	(lbs)	(mg/L)	(%)
01-Fri	29.71	33.76	23.85						
02-Sat	30.53	39.84	23.40						
03-Sun	29.92	38.09	22.20	154.0	38,428.1	186.00	46,413.1	174.0	93.5
04-Mon	30.81	39.99	22.24	300.0	77,086.6	166.00	42,654.6	154.0	92.8
05-Tue	28.66	33.08	22.24	278.0	66,448.8	182.00	43,502.4	170.0	93.4
06-Wed	28.01	32.39	21.60	272.0	63,540.1	161.00	37,610.1	153.0	95.0
07-Thu	27.58	31.68	21.49	328.0	75,445.6	176.00	40,483.0	166.0	94.3
08-Fri	27.15	31.26	20.91						
09-Sat	27.64	35.03	20.26						
10-Sun	34.65	66.75	20.19	126.0	36,411.6	156.00	45,081.0	136.0	87.2
11-Mon	36.26	52.97	24.09	150.0	45,361.3	128.00	38,708.3	114.0	89.1
12-Tue	30.91	36.24	24.12	472.0	121,676.6	112.00	28,872.4	108.0	96.4
13-Wed	30.00	34.68	23.47	680.0	170,136.0	255.00	63,801.0	242.0	94.9
14-Thu	31.31	38.16	23.32						
15-Fri	41.00	81.25	25.29						
16-Sat	49.11	82.12	37.39						
17-Sun	37.34	44.34	30.71	82.0	25,536.1	114.00	35,501.4	104.0	91.2
18-Mon	35.34	40.36	29.47	122.0	35,957.7	96.00	28,294.6	95.0	99.0
19-Tue	34.36	38.33	29.68	131.0	37,539.7	87.00	24,930.9	86.0	98.9
20-Wed	34.89	38.94	28.53	164.0	47,721.1	114.00	33,172.0	111.0	97.4
21-Thu	33.16	38.32	26.56	240.0	66,373.1	127.00	35,122.4	119.0	93.7
22-Fri	37.00	46.55	28.53						
23-Sat	33.03	41.08	28.45						
24-Sun	32.81	44.15	29.06	106.0	29,005.4	118.00	32,289.0	115.0	97.5
25-Mon	33.08	46.73	26.12	135.0	37,244.8	110.00	30,347.6	109.0	99.1
26-Tue	30.10	33.72	26.35	88.0	22,091.0	69.00	17,321.3	68.0	98.6
27-Wed	30.43	35.94	26.07	116.0	29,439.2	60.00	15,227.2	60.0	100.0
28-Thu	30.06	35.01	28.21	91.0	22,813.7	53.00	13,287.1	53.0	100.0
29-Fri	33.61	46.51	25.96						
30-Sat	28.45	41.35	22.15						
31-Sun	33.45	59.94	25.91	146.0	40,730.1	229.00	63,884.8	209.0	91.3
Min	27.15	31.26	20.19	82.0	22,091	53.0	13,287	53.0	87.2
Max	49.11	82.12	37.39	680.0	170,136	255.0	63,885	242.0	100.0
Avg	32.59	43.18	25.41	209.1	54,449	135.0	35,825	127.3	95.2
Total	1010.36				1,088,986		716,504		

Lowell Regional Wastewater Utility

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Date	Primary Influent Data												
	Primary Influent Flow			CBOD		TSS		VSS	TVS	Settleable Solids	Grit & Screenings	Ambient Temperature (F)	
	Total (MG)	Max. Hourly (MGD)	Min. Hourly (MGD)	(mg/L)	(lbs)	(mg/L)	(lbs)	(mg/L)	(%)	(ml/L)	(cu ft)	Min.	Max.
01-Fri	29.71	33.76	23.85									12	41
02-Sat	30.53	39.84	23.40									27	35
03-Sun	29.92	38.09	22.20			302.0	75,359	286.0	94.7	14.0		29	42
04-Mon	30.81	39.99	22.24			174.0	44,710	162.0	93.1	12.0		16	38
05-Tue	28.66	33.08	22.24	160.0	38,244	236.0	56,410	224.0	94.9	16.5		14	39
06-Wed	28.01	32.39	21.60	606.0	141,564	240.0	56,065	234.0	97.5	17.0		11	25
07-Thu	27.58	31.68	21.49	350.0	80,506	276.0	63,485	260.0	94.2	23.0		12	28
08-Fri	27.15	31.26	20.91									15	36
09-Sat	27.64	35.03	20.26									22	45
10-Sun	34.65	66.75	20.19			458.0	132,353	398.0	86.9	24.0		30	41
11-Mon	36.26	52.97	24.09			154.0	46,571	137.0	89.0	10.0		34	48
12-Tue	30.91	36.24	24.12	587.0	151,322	270.0	69,603	266.0	98.5	12.0		24	43
13-Wed	30.00	34.68	23.47	511.0	127,852	281.0	70,306	238.0	84.7	23.0		24	44
14-Thu	31.31	38.16	23.32			212.0	55,359	182.0	85.8	9.5		36	52
15-Fri	41.00	81.25	25.29									43	63
16-Sat	49.11	82.12	37.39									30	47
17-Sun	37.34	44.34	30.71			490.0	152,594	424.0	86.5	30.0		25	40
18-Mon	35.34	40.36	29.47			246.0	72,505	228.0	92.7	25.0		25	41
19-Tue	34.36	38.33	29.68	171.0	49,002	272.0	77,945	248.0	91.2	20.0		24	47
20-Wed	34.89	38.94	28.53	115.0	33,463	222.0	64,598	215.0	96.8	11.0		24	53
21-Thu	33.16	38.32	26.56	140.0	38,718	214.0	59,183	190.0	88.8	7.0		30	51
22-Fri	37.00	46.55	28.53									33	42
23-Sat	33.03	41.08	28.45									30	45
24-Sun	32.81	44.15	29.06			202.0	55,274	195.0	96.5	9.5		32	59
25-Mon	33.08	46.73	26.12			156.0	43,038	152.0	97.4	8.5		28	47
26-Tue	30.10	33.72	26.35	125.0	31,379	124.0	31,128	120.0	96.8	6.5		25	43
27-Wed	30.43	35.94	26.07	130.0	32,992	84.0	21,318	80.0	95.2	2.1		26	46
28-Thu	30.06	35.01	28.21			60.0	15,042	58.0	96.7	1.5		30	55
29-Fri	33.61	46.51	25.96									41	57
30-Sat	28.45	41.35	22.15									44	66
31-Sun	33.45	59.94	25.91			522.0	145,624	482.0	92.3	40.0		35	68
Min	27.15	31.26	20.19	115.0	31,379	60.0	15,042	58.0	84.7	1.5		11	25
Max	49.11	82.12	37.39	606.0	151,322	522.0	152,594	482.0	98.5	40.0		44	68
Avg	32.59	43.18	25.41	289.5	72,504	247.4	67,070	227.6	92.9	15.3		27	46
Total	1010.36				725,042		1,408,470						

Lowell Regional Wastewater Utility

NPDES Report (Permit NO. MA0100633)

Printed on Fri Apr 12 2019

March 2019

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Date	Primary Effluent Data													
	Primary Effluent Flow	CBOD			TSS			VSS	TVS	Settleable Solids	PS&G Avg Rate	PS&G Total Flow	Ammonia NH3	Nitrate NO3
	Total (MG)	(mg/L)	(lbs)	(% Removal)	(mg/L)	(lbs)	(% Removal)	(mg/L)	(%)	(ml/L)	(GPM)	(MG)	(mg/L)	(mg/L)
01-Fri	28.27										1,032	1.48		
02-Sat	29.09										1,019	1.48		
03-Sun	28.50				74.0	18,465	60.2	70.7	95.5	0.30	1,010	1.46		
04-Mon	29.40				91.5	23,511	44.9	81.3	88.9	0.60	1,014	1.45		
05-Tue	27.26	118.0	28,205	57.6	70.7	16,899	61.2	66.7	94.3	0.30	1,003	1.45	18.3	0.26
06-Wed	26.59	118.0	27,565	56.6	59.3	13,853	63.2	56.7	95.6	0.05	1,016	1.46		
07-Thu	26.16	122.0	28,062	62.8	60.0	13,801	65.9	58.0	96.7	0.10	1,014	1.46		
08-Fri	25.74										1,015	1.46		
09-Sat	26.22										1,019	1.46		
10-Sun	33.30				110.0	31,788	29.5	93.3	84.8	1.50	1,014	1.46		
11-Mon	34.83				66.5	20,110	48.0	56.0	84.2	0.30	1,018	1.47		
12-Tue	29.48	189.0	48,722	60.0	53.3	13,740	52.4	57.3	107.5	0.20	1,029	1.47	15.9	0.42
13-Wed	28.57	122.0	30,524	82.1	66.0	16,513	74.1	59.3	89.8	0.20	1,024	1.48		
14-Thu	29.88				55.3	14,440		52.0	94.0	0.10	1,027	1.48		
15-Fri	39.62										937	1.45		
16-Sat	47.91										891	1.24		
17-Sun	36.10				88.7	27,623	22.2	80.7	91.0	7.00	921	1.28		
18-Mon	33.91				66.0	19,453	31.3	64.7	98.0	0.20	1,024	1.47		
19-Tue	32.93	82.0	23,498	37.4	52.0	14,901	40.2	48.9	94.0	0.10	1,027	1.48	15.5	0.31
20-Wed	33.46	90.0	26,188	45.1	57.3	16,673	49.7	54.0	94.2	0.30	1,022	1.47		
21-Thu	31.71	154.0	42,589	35.8	74.0	20,465	41.7	68.0	91.9	1.50	1,037	1.49		
22-Fri	35.55										1,042	1.49		
23-Sat	31.56										1,055	1.51		
24-Sun	31.34				50.0	13,682	57.6	48.9	97.8	0.20	1,047	1.52		
25-Mon	31.65				64.0	17,657	41.8	62.0	96.9	0.10	1,022	1.48		
26-Tue	28.68	78.0	19,581	11.4	53.3	13,380	22.8	48.0	90.1	0.10	1,020	1.47	17.7	0.20
27-Wed	29.01	102.0	25,886	12.1	59.3	15,050	1.2	56.0	94.4	0.30	1,020	1.47		26.00
28-Thu	28.63	66.0	16,546	27	47.3	11,858	10.8	44.0	93.0	0.10	1,020	1.47		
29-Fri	32.20										978	1.46		
30-Sat	27.14										972	1.35		
31-Sun	32.03				94.7	26,419	58.6	86.0	90.8	0.80	1,007	1.47		
Min	25.74	66.0	16,546	11.4	47.3	11,858	1.2	44.0	84.2	0.05	891	1.24	15.5	0.20
Max	47.91	189.0	48,722	82.1	110.0	31,788	74.1	93.3	107.5	7.00	1,055	1.52	18.3	26.00
Avg	31.18	112.8	28,852	44.4	67.3	18,109	43.9	62.5	93.5	0.68	1,010	1.45	16.9	5.44
Total	966.72		317,368			380,281						45.08		

NPDES Report (Permit NO. MA0100633)

March 2019

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Lowell Regional Wastewater Utility
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Date	Secondary Data							
	SAS					Ammonia NH3-N	Nitrogen Removal	Nitrate NO3
	RAS TSS (mg/L)	Avg TS Conc. (mg/L)	RAS Avg Flow (gpm)	WAS Avg Flow (gpm)	WAS TS (lb)	(mg/L)	(%)	(mg/L)
01-Fri	5,161		7,610	280				
02-Sat	5,091		7,817	278				
03-Sun	5,071		7,646	278				
04-Mon	5,063	7,725	7,874	278	25,834			
05-Tue	5,294		7,337	261		11.6	36.6	2.71
06-Wed	5,372		7,175	274				
07-Thu	5,677	7,740	7,056	283	26,318			
08-Fri	5,802		6,961	280				
09-Sat	5,725		7,080	277				
10-Sun	5,432		8,596	268				
11-Mon	5,965	9,065	9,314	276	30,052			
12-Tue	6,864		7,929	280		10.1	36.5	2.58
13-Wed	6,734		7,681	283				
14-Thu	6,565	7,595	8,027	307	28,028			
15-Fri	5,973		9,858	301				
16-Sat	5,911		12,044	303				
17-Sun	7,033		11,477	303				
18-Mon	7,182	8,130	10,852	298	29,090			
19-Tue	7,047		10,524	297		11.8	23.9	1.23
20-Wed	6,732		10,682	300				
21-Thu	6,776	9,425	9,937	302	34,157			
22-Fri	6,361		10,541	262				
23-Sat	6,278		9,337	303				
24-Sun	5,329		10,475	351				
25-Mon	5,231	6,913	10,707	179	14,838			
26-Tue	5,290		9,800	163		13.3	24.9	1.87
27-Wed	5,272		8,941	277				
28-Thu	5,031	6,960	9,349	302	25,243			
29-Fri	4,507		9,583	368				
30-Sat	4,915		8,091	400				
31-Sun	5,087		8,164	396				
Min	4,507	6,913	6,961	163	14,838	10.1	23.9	1.23
Max	7,182	9,425	12,044	400	34,157	13.3	36.6	2.71
Avg	5,799	7,944	8,983	291	26,695	11.7	30.5	2.10
Total					213,560			

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Date	Solids Handling Data													
	Polymer		Hauled Waste Total gal	Septage Received (gal)	TWAS		GT Average Flow (GPM)	Sludge Feed (%TS)	Total Dewatering Feed Flow (gal)	Hauled Sludge Cake				
	(gal)	(lbs)			Average Flow (GPM)	(%TS)				(wet lbs)	(wet tons)	(wet metric tons)	(dry tons)	(%TS)
01-Fri	93	776			31.7	4.2	964	3.3	179,538	181,940	90.97	82.52	20.35	22.4
02-Sat	93	776					960	3.3	115,358	74,800	37.40	33.93	8.07	21.6
03-Sun	93	776					948	3.2	86,841	65,900	32.95	29.89	7.28	22.1
04-Mon	93	776			31.5	4.2	946		38,074	315,800	157.90	143.23		
05-Tue	93	776			29.5	4.2	947		37,411	0	0.00	0.00		
06-Wed	93	776			25.5	5.1	953		39,384	0	0.00	0.00		
07-Thu	93	776			26.4	5.1	1,288		39,768	0	0.00	0.00		
08-Fri	93	776			26.1	5.1	1,197		33,895	0	0.00	0.00		
09-Sat	93	776					1,061		57,856	0	0.00	0.00		
10-Sun	93	776					1,034		8,069	0	0.00	0.00		
11-Mon	93	776			23.4	5.6	1,001		26,518	0	0.00	0.00		
12-Tue	93	776			23.5	5.6	1,070		40,797	0	0.00	0.00		
13-Wed	93	776			23.8	5.6	1,072		27,489	0	0.00	0.00		
14-Thu	93	776					1,053	3.4	48,015	0	0.00	0.00	0.00	25.0
15-Fri	93	776			28.9	4.9	1,032	3.8	94,046	130,140	65.07	59.02	15.96	24.5
16-Sat	93	776					887	4.0	97,026	0	0.00	0.00	0.00	23.8
17-Sun	93	776					905	4.3	70,298	65,160	32.58	29.55	7.49	23.0
18-Mon	93	776			28.6	4.9	991	4.2	92,462	313,660	156.83	142.26	34.89	22.3
19-Tue	93	776			25.1	5.6	983	3.4	88,296	196,320	98.16	89.04	24.56	25.0
20-Wed	93	776			25.4	5.6	977	4.5	108,101	106,500	53.25	48.30	13.77	25.9
21-Thu	93	776			24.5	5.8	1,051	3.9	118,541	190,500	95.25	86.40	22.88	24.0
22-Fri	93	776			21.4	5.8	1,050	3.9	99,970	128,560	64.28	58.31	16.55	25.8
23-Sat	93	776					1,038	3.7	53,215	65,060	32.53	29.51	8.34	25.6
24-Sun	93	776					1,075	3.7	75,152	63,100	31.55	28.62	7.44	23.6
25-Mon	93	776					1,055	4.1	54,687	311,000	155.50	141.05	36.57	23.5
26-Tue	93	776			13.7	5.6	1,054	3.4	88,347	237,480	118.74	107.71	28.08	23.7
27-Wed	93	776					1,058	3.6	80,416	183,400	91.70	83.18	21.03	22.9
28-Thu	93	776			35.9	4.0	1,058	3.8	108,610	194,880	97.44	88.39	22.41	23.0
29-Fri	93	776			32.3	5.4	1,049	1.8	76,158	261,500	130.75	118.60	26.28	20.1
30-Sat	93	776					983	2.5	3,260	0	0.00	0.00	0.00	26.1
31-Sun	93	776					1,064	3.6	63,587	0	0.00	0.00	0.00	24.9
Min	93	776			13.67	3.95	887	1.8	3,260	0	0.00	0.00	0.00	20.1
Max	93	776			35.93	5.80	1,288	4.5	179,538	315,800	157.90	197.06	36.57	26.1
Avg	93	776			26.51	5.09	1,026	3.6	69,393	99,539	49.77	62.11	15.33	23.7
Total	2,883	24,044							2,151,184	3,085,700	1,542.85	1,925.48	321.96	

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Date	Plant Effluent Data (1)											
	Plant Effluent Flow			Settleable Solids	Effluent Temp	D.O.	Cl2 Dose	Chlorine Residual (mg/L) (Grab Samples)			Chlorine Residual Continuous Recording	
	Total (MG)	Max. Hourly (MGD)	Min. Hourly (MGD)	(ml/L)	(F)	Grab (mg/L)	(lbs)	Shift 1	Shift 2	Shift 3	Avg. (mg/L)	Max. (mg/L)
01-Fri	27.40	30.75	20.18		50.5	9.4	948		0.14		0.05	0.06
02-Sat	28.59	37.34	20.69		50.2	9.3	1,011		0.03		0.04	0.07
03-Sun	28.17	35.32	19.57	0.05	50.4	8.9	1,011		0.06		0.04	0.05
04-Mon	29.41	37.90	20.44	0.05	49.6	9.0	948		0.04		0.04	0.10
05-Tue	26.43	30.02	19.16	0.05	49.3	8.8	885		0.02		0.05	0.05
06-Wed	25.80	29.67	18.77	0.05	51.3	8.3	948		0.08		0.04	0.05
07-Thu	25.37	28.78	18.42	0.05	49.5	8.4	821		0.04		0.05	0.06
08-Fri	25.32	28.59	18.06		49.5	8.8	885		0.02		0.05	0.06
09-Sat	25.84	32.32	17.35		50.2	8.9	885		0.00		0.04	0.05
10-Sun	33.64	65.53	18.12	0.05	49.3	8.8	1,074		0.00		0.04	0.08
11-Mon	35.79	51.15	23.29	0.05	48.0	8.7	948		0.00		0.04	0.06
12-Tue	29.95	34.60	22.53	0.05	50.0	8.8	821		0.10		0.04	0.06
13-Wed	28.72	33.00	21.25	0.05	50.7	8.6	885		0.13		0.04	0.05
14-Thu	30.23	36.52	21.71		51.1	8.7	948		0.03		0.04	0.05
15-Fri	39.79	77.52	23.90		50.7	8.6	1,074		0.07		0.03	0.16
16-Sat	49.57	80.62	37.03		50.5	8.0	1,389		0.01		0.03	0.06
17-Sun	36.85	42.74	29.30	0.05	50.2	8.2	1,200		0.00		0.03	0.05
18-Mon	33.66	37.19	27.26	0.05	49.8	8.1	1,074		0.01		0.04	0.06
19-Tue	32.74	36.99	27.84	0.05	50.4	8.2	1,200		0.02		0.04	0.06
20-Wed	33.01	36.80	26.02	0.05	51.1	8.4	1,074		0.03		0.03	0.06
21-Thu	31.83	36.72	24.47	0.05	50.0	8.1	1,074		0.01		0.03	0.05
22-Fri	36.23	43.79	27.15		50.9	8.2	1,264		0.09		0.03	0.06
23-Sat	31.53	38.22	26.57		51.1	8.3	1,011		0.03		0.02	0.06
24-Sun	30.84	41.18	25.82	0.05	50.7	8.5	1,264		0.03		0.02	0.03
25-Mon	32.11	44.06	24.92	0.05	51.3	8.2	1,200		0.01		0.01	0.04
26-Tue	28.68	31.27	24.98	1.20	51.3	8.2	13,264		0.02		0.03	0.05
27-Wed	28.78	31.86	24.86	0.20	52.0	8.2	1,327		0.04		0.04	0.07
28-Thu	28.37	32.79	26.05	0.20	52.0	8.3	1,642		0.03		0.03	0.05
29-Fri	32.54	44.87	24.38		52.7	8.1	2,338		0.03		0.03	0.06
30-Sat	27.77	40.11	21.75		55.9	7.1	2,716		0.01		0.01	0.03
31-Sun	33.37	60.25	24.51	0.20	53.1	8.0	2,021		0.01		0.01	0.05
Min	25.32	28.59	17.35	0.05	48.0	7.1	821		0.00		0.01	0.03
Max	49.57	80.62	37.03	1.20	55.9	9.4	13,264		0.14		0.05	0.16
Avg	31.24	40.92	23.43	0.13	50.7	8.5	1,585		0.04		0.034	0.06
Total	968.31	12 MM Avg= 32.35					49,150					

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	Plant Effluent Data (2)																
Date	Plant Effluent pH			Fecal Coliform	Fecal Coliform Bypass Event	CBOD			TSS			VSS	TVS	Ammonia NH3-N	Nitrogen Removal	Total Phosphorus	Phosphorus Removal
	Min.	Max.	Grab	(colonies/100 ml)	(colonies/100 ml)	(mg/L)	(lbs)	(% Removal)	(mg/L)	(lbs)	(% Removal)	(mg/L)	(%)	(mg/L)	(%)	(mg/L)	(%)
01-Fri	6.5	6.7	6.9	1													
02-Sat	6.5	6.7	6.9														
03-Sun	6.5	6.6	6.8			7.1	1,668	95.7	10.1	2,373	94.9	10.1	100.0				
04-Mon	6.4	6.6	6.9	0		8.6	2,109	97.3	11.5	2,821	93.4	10.7	93.0				
05-Tue	6.5	6.6	6.7	1		4.8	1,058	98.4	9.0	1,984	95.4	8.8	97.8				94.2
06-Wed	6.5	6.6	6.8	0		4.4	947	98.5	5.1	1,097	97.1	5.1	100.0				
07-Thu	6.6	6.7	6.8	1		3.6	762	99.0	4.3	910	97.8	4.3	100.0				
08-Fri	6.5	6.7	6.9	1													
09-Sat	6.5	6.6	6.8														
10-Sun	6.5	14.0	6.8			15.2	4,264	88.3	16.6	4,657	89.7	15.6	94.0				
11-Mon	6.4	6.5	6.7	3		7.1	2,119	95.3	13.4	4,000	89.7	12.4	92.5				
12-Tue	6.4	6.5	6.8	2		3.5	874	99.3	7.6	1,898	93.4	7.6	100.0				
13-Wed	6.4	6.6	7.0	0		4.7	1,126	99.3	7.9	1,892	97.0	7.9	100.0				
14-Thu	6.4	6.6	7.0	0					5.5	1,386		5.5	100.0				
15-Fri	6.4	6.7	6.9	0													
16-Sat	6.4	6.7	6.8														
17-Sun	6.6	6.7	6.8			8.7	2,673	89.5	13.5	4,148	88.3	12.7	94.1				
18-Mon	6.5	6.8	6.8	3		8.4	2,358	93.4	20.2	5,671	80.0	20.0	99.0				
19-Tue	6.6	6.8	6.8	1		4.2	1,147	96.9	8.6	2,348	90.6	8.6	100.0				
20-Wed	6.5	6.7	7.0	0		5.8	1,597	96.7	9.9	2,726	91.8	9.5	96.0				
21-Thu	6.5	6.7	6.8	1		5.6	1,487	97.8	7.9	2,097	94.0	7.2	91.1				
22-Fri	6.5	6.7	6.8	5													
23-Sat	6.4	6.6	6.8														
24-Sun	6.5	6.7	6.8			35.0	9,001	69.0	27.0	6,944	78.5	25.6	94.8				
25-Mon	6.5	6.7	6.7	1		14.1	3,776	89.9	21.6	5,785	80.9	20.8	96.3				
26-Tue	6.6	6.7	7.0	2		20.4	4,879	77.9	64.0	15,306	11.6	60.0	93.8				
27-Wed	6.5	6.7	6.7	1		10.8	2,592	91.2	39.0	9,361	38.5	38.5	98.7				
28-Thu	6.6	6.7	6.8	2		15.6	3,690	83.8	46.0	10,882	18.1	44.0	95.7				
29-Fri	6.6	6.8	6.8	8												3.4	
30-Sat	6.6	6.7	6.8														
31-Sun	6.7	6.8	6.9			45.0	12,525	69.2	51.0	14,194	77.8	49.5	97.1				
Min	6.4	6.5	6.7	0		3.5	762	69.0	4.3	910	11.6	4.3	91.1			3.4	94.2
Max	6.7	14.0	7.0	8		45.0	12,525	99.3	64.0	15,306	97.8	60.0	100.0			3.4	94.2
Avg				2		11.6	3,033	91.3	19.0	4,880	79.9	18.3	96.8			3.4	94.2
Total		MO GEO= 1					60,653	91.6		102,481	92.7						

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Date	Duck Island WWTF Rain (in)	Secondary Bypass			Barasford Station Div.			Beaver Brook Station Div.			Merrimack Station Div.			Tilden Station Diverson		
		Duration	Volume	Number	Duration	Volume	Number	Duration	Volume	Number	Duration	Volume	Number	Duration	Volume	Number
		Mins.	MG	Events	Mins.	MG	Events	Mins.	MG	Events	Mins.	MG	Events	Mins.	MG	Events
01-Fri																
02-Sat	0.05															
03-Sun	0.06															
04-Mon	0.47															
05-Tue																
06-Wed																
07-Thu																
08-Fri																
09-Sat																
10-Sun	0.40	269	2.26	1												
11-Mon	0.02															
12-Tue																
13-Wed																
14-Thu																
15-Fri	0.32	109	1.73	1	87	1.04	1				87	1.94	1			
16-Sat		280	4.88	1	44	0.19	1				42	0.14	1			
17-Sun																
18-Mon		0	0.10													
19-Tue																
20-Wed																
21-Thu																
22-Fri	0.20															
23-Sat	0.06		0.12													
24-Sun		285	2.45	1												
25-Mon		378	3.57	1												
26-Tue																
27-Wed																
28-Thu		0	0.05													
29-Fri	0.03	447	3.55	1												
30-Sat		103	0.61	1												
31-Sun	0.17	299	4.79	1												
Min	0.02				44						42					
Max	0.47	447	4.88		87	1.04					87	1.94				
Avg	0.18															
Total	1.78	2,170	24.11	8	131	1.23	2				129	2.08	2			

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Date	Walker Station Diversion			Warren Station Diversion			West Station Diversion			Read Station Diversion			All Diversions		
	Duration	Volume	Number	Duration	Volume	Number	Duration	Volume	Number	Duration	Volume	Number	Duration	Volume	Number
	Mins.	MG	Events	Mins.	MG	Events	Mins.	MG	Events	Mins.	MG	Events	Mins.	MG	Events
01-Fri															
02-Sat															
03-Sun															
04-Mon															
05-Tue															
06-Wed															
07-Thu															
08-Fri															
09-Sat															
10-Sun															
11-Mon															
12-Tue															
13-Wed															
14-Thu															
15-Fri				23	0.26	1	67	2.20	1				264	5.44	1
16-Sat							45	0.40	1				131	0.73	1
17-Sun															
18-Mon															
19-Tue															
20-Wed															
21-Thu															
22-Fri															
23-Sat															
24-Sun															
25-Mon															
26-Tue															
27-Wed															
28-Thu															
29-Fri															
30-Sat															
31-Sun															
Min				23			45						131		
Max				23	0.26		67	2.20					264	5.44	
Avg															
Total				23	0.26	1	112	2.60	2				395	6.17	2